

seq listing.txt

SEQUENCE LISTING

<110> BRETT, Sara
HAMBLIN, Paul A.
OGILVIE, Louise

<120> Vaccine

<130> VB60547

<140> Not Yet Assigned
<141> 2005-05-13

<150> PCT/EP03/12793
<151> 2003-11-13

<150> GB 0226422.7
<151> 2002-11-15

<160> 24

<170> FastSEQ for windows Version 4.0

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35 40 45
Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60
Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Ala Trp Ala Gln Pro Gly
65 70 75 80
Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95
Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110
Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125
Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
130 135 140
Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
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Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175
Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala
180 185 190

<210> 10
<211> 632
<212> PRT
<213> Hepatitis C virus

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Glu Val Gln Val Val Ser Thr Ala Thr Gln Ser Phe Leu Ala Thr Cys
35 40 45
Ile Asn Gly Val Cys Trp Thr Val Tyr His Gly Ala Gly Ser Lys Thr
50 55 60

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100     105     110
Asp Val Ile Pro Val Arg Arg Arg Gly Asp Ser Arg Gly Ser Leu Leu
115     120     125
Ser Pro Arg Pro Val Ser Tyr Leu Lys Gly Ser Val Gly Gly Pro Leu
130     135     140
Leu Cys Pro Ser Gly His Val Val Gly Ile Phe Arg Ala Ala Val Cys
145     150     155     160
Thr Arg Gly Val Ala Lys Ala Val Asp Phe Ile Pro Val Glu Ser Met
165     170     175
Glu Thr Thr Met Arg Ser Pro Val Phe Thr Asp Asn Ser Ser Pro Pro
180     185     190
Ala Val Pro Gln Thr Phe Gln Val Ala His Leu His Ala Pro Thr Gly
195     200     205
Ser Gly Lys Ser Thr Lys Val Pro Ala Ala Tyr Ala Ala Gln Gly Tyr
210     215     220
Lys Val Leu Val Leu Asn Pro Ser Val Ala Ala Thr Leu Gly Phe Gly
225     230     235     240
Ala Tyr Met Ser Lys Ala His Gly Ile Asp Pro Asn Ile Arg Thr Gly
245     250     255
Val Arg Thr Ile Thr Thr Gly Ala Pro Ile Thr Tyr Ser Thr Tyr Gly
260     265     270
Lys Phe Leu Ala Asp Gly Gly Cys Ser Gly Gly Ala Tyr Asp Ile Ile
275     280     285
Ile Cys Gln Glu Cys His Ser Thr Asp Ser Thr Thr Ile Leu Gly Ile
290     295     300
Gly Thr Val Leu Asp Gln Ala Glu Thr Ala Gly Ala Arg Leu Val Val
305     310     315     320
Leu Ala Thr Ala Thr Pro Pro Gly Ser Val Thr Val Pro His Pro Asn
325     330     335
Ile Glu Glu Val Ala Leu Ser Asn Asn Gly Glu Ile Pro Phe Tyr Gly
340     345     350
Lys Ala Ile Pro Ile Glu Ala Ile Lys Gly Gly Arg His Leu Ile Phe
355     360     365
Cys His Ser Lys Lys Lys Cys Asp Glu Leu Ala Ala Lys Leu Ser Gly
370     375     380
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385     390     395     400
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405     410     415
Thr Gly Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr Cys
420     425     430
Val Thr Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile Glu
435     440     445
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450     455     460
Arg Thr Gly Arg Gly Arg Ser Gly Ile Tyr Arg Phe Val Thr Pro Gly
465     470     475     480
Glu Arg Pro Ser Gly Met Phe Asp Ser Ser Val Leu Cys Glu Cys Tyr
485     490     495
Asp Ala Gly Cys Ala Trp Tyr Glu Leu Thr Pro Ala Glu Thr Ser Val
500     505     510
Arg Leu Arg Ala Tyr Leu Asn Thr Pro Gly Leu Pro Val Cys Gln Asp
515     520     525
His Leu Glu Phe Trp Glu Ser Val Phe Thr Gly Leu Thr His Ile Asp
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Ala His Phe Leu Ser Gln Thr Lys Gln Ala Gly Asp Asn Phe Pro Tyr
545     550     555     560
Leu Val Ala Tyr Gln Ala Thr Val Cys Ala Arg Ala Gln Ala Pro Pro
565     570     575
Pro Ser Trp Asp Gln Met Trp Lys Cys Leu Ile Arg Leu Lys Pro Thr
580     585     590
Leu His Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Ala Val Gln Asn
595     600     605

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 Ser Ala Asp Leu Glu Val Val Thr
 625 630

<210> 11
 <211> 214
 <212> PRT
 <213> Hepatitis C virus

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 20 25 30
 Met Ala Phe Thr Ala Ser Ile Thr Ser Pro Leu Thr Thr Gln Asn Thr
 35 40 45
 Leu Leu Phe Asn Ile Leu Gly Gly Trp Val Ala Ala Gln Leu Ala Pro
 50 55 60
 Pro Ser Ala Ala Ser Ala Phe Val Gly Ala Gly Ile Ala Gly Ala Ala
 65 70 75 80
 Val Gly Ser Ile Gly Leu Gly Lys Val Leu Val Asp Ile Leu Ala Gly
 85 90 95
 Tyr Gly Ala Gly Val Ala Gly Ala Leu Val Ala Phe Lys Val Met Ser
 100 105 110
 Gly Glu Val Pro Ser Thr Glu Asp Leu Val Asn Leu Leu Pro Ala Ile
 115 120 125
 Leu Ser Pro Gly Ala Leu Val Val Gly Val Val Cys Ala Ala Ile Leu
 130 135 140
 Arg Arg His Val Gly Pro Gly Glu Gly Ala Val Gln Trp Met Asn Arg
 145 150 155 160
 Leu Ile Ala Phe Ala Ser Arg Gly Asn His Val Ser Pro Thr His Tyr
 165 170 175
 Val Pro Glu Ser Asp Ala Ala Ala Arg Val Thr Gln Ile Leu Ser Ser
 180 185 190
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 195 200 205
 Asp Cys Ser Thr Pro Cys
 210

<210> 12
 <211> 592
 <212> PRT
 <213> Hepatitis C virus

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 35 40 45
 Arg Gln Lys Lys Val Thr Phe Asp Arg Leu Gln Val Leu Asp Asp His
 50 55 60
 Tyr Arg Asp Val Leu Lys Glu Met Lys Ala Lys Ala Ser Thr Val Lys
 65 70 75 80
 Ala Lys Leu Leu Ser Ile Glu Glu Ala Cys Lys Leu Thr Pro Pro His
 85 90 95
 Ser Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val Arg Asn Leu
 100 105 110
 Ser Ser Arg Ala Val Asn His Ile Arg Ser Val Trp Glu Asp Leu Leu
 115 120 125
 Glu Asp Thr Glu Thr Pro Ile Asp Thr Thr Ile Met Ala Lys Ser Glu
 130 135 140
 Val Phe Cys Val Gln Pro Glu Lys Gly Gly Arg Lys Pro Ala Arg Leu
 145 150 155 160

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Ile Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys Met Ala Leu
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Tyr Asp Val Val Ser Thr Leu Pro Gln Ala Val Met Gly Ser Ser Tyr
180 185 190
Gly Phe Gln Tyr Ser Pro Lys Gln Arg Val Glu Phe Leu Val Asn Thr
195 200 205
Trp Lys Ser Lys Lys Cys Pro Met Gly Phe Ser Tyr Gly Thr Arg Cys
210 215 220
Phe Gly Ser Thr Val Thr Glu Ser Asp Ile Arg Val Glu Glu Ser Ile
225 230 235 240
Tyr Gln Cys Cys Asp Leu Ala Pro Glu Ala Arg Gln Ala Ile Arg Ser
245 250 255
Leu Thr Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser Lys Gly
260 265 270
Gln Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr
275 280 285
Ser Cys Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Cys
290 295 300
Arg Ala Ala Lys Leu Gln Asp Cys Thr Met Leu Val Asn Gly Asp Asp
305 310 315 320
Leu Val Val Ile Cys Glu Ser Ala Gly Thr Gln Glu Asp Ala Ala Ala
325 330 335
Leu Arg Ala Phe Thr Glu Ala Met Thr Arg Tyr Ser Ala Pro Pro Gly
340 345 350
Asp Pro Pro Gln Pro Glu Tyr Asp Leu Glu Leu Ile Thr Ser Cys Ser
355 360 365
Ser Asn Val Ser Val Ala His Asp Ala Ser Gly Lys Arg Val Tyr Tyr
370 375 380
Leu Thr Arg Asp Pro Thr Thr Pro Leu Ala Arg Ala Ala Trp Glu Thr
385 390 395 400
Ala Arg His Thr Pro Val Asn Ser Trp Leu Gly Asn Ile Ile Met Tyr
405 410 415
Ala Pro Thr Leu Trp Ala Arg Met Ile Leu Met Thr His Phe Phe Ser
420 425 430
Ile Leu Leu Ala Gln Glu Gln Leu Glu Lys Ala Leu Asp Cys Gln Ile
435 440 445
Tyr Gly Ala Cys Tyr Ser Ile Glu Pro Leu Asp Leu Pro Gln Ile Ile
450 455 460
Glu Arg Leu His Gly Leu Ser Ala Phe Ser Leu His Ser Tyr Ser Pro
465 470 475 480
Gly Glu Ile Asn Arg Val Ala Ser Cys Leu Arg Lys Leu Gly Val Pro
485 490 495
Pro Leu Arg Val Trp Arg His Arg Ala Arg Ser Val Arg Ala Lys Leu
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Leu Ser Gln Gly Gly Arg Ala Ala Thr Cys Gly Arg Tyr Leu Phe Asn
515 520 525
Trp Ala Val Arg Thr Lys Leu Lys Leu Thr Pro Ile Pro Ala Ala Ser
530 535 540
Gln Leu Asp Leu Ser Gly Trp Phe Val Ala Gly Tyr Ser Gly Gly Asp
545 550 555 560
Ile Tyr His Ser Leu Ser Arg Ala Arg Pro Arg Trp Phe Pro Leu Cys
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<210> 13
<211> 15
<212> PRT
<213> Hepatitis C virus

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<210> 14
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<212> PRT
<213> Hepatitis C virus

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<210> 15
<211> 15
<212> PRT
<213> Hepatitis C virus

<400> 15
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<210> 16
<211> 15
<212> PRT
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<400> 16
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<210> 17
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<212> PRT
<213> Hepatitis C virus

<400> 17
Ile Gln Tyr Leu Ala Gly Leu Ser Thr Leu Pro Gly Asn Pro Ala
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<210> 18
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<212> PRT
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<211> 9595
<212> DNA
<213> Hepatitis C virus

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seq listing.txt

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seq listing.txt

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 <212> DNA
 <213> Hepatitis C virus

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<210> 21
 <211> 1899
 <212> DNA
 <213> Hepatitis C virus

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seq listing.txt

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 <212> DNA
 <213> Hepatitis C virus

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 <211> 1779
 <212> DNA
 <213> Hepatitis C virus

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<210> 24
 <211> 3010
 <212> PRT
 <213> Hepatitis C virus

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 35 40 45

seq listing.txt

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Phe	Leu	Leu	Ala	Leu	Leu	Ser	Cys	Leu	Thr	Ile	Pro	Ala	Ser	Ala	Tyr
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Trp	Gly	Glu	Asn	Glu	Thr	Asp	Val	Met	Leu	Leu	Asn	Asn	Thr	Arg	Pro
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seq listing.txt

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 645 650 655
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 660 665 670
 Gln Ile Leu Pro Cys Ala Phe Thr Thr Leu Pro Ala Leu Ser Thr Gly
 675 680 685
 Leu Ile His Leu His Gln Asn Ile Val Asp Val Gln Tyr Leu Tyr Gly
 690 695 700
 Val Gly Ser Ala Phe Val Ser Phe Ala Ile Lys Trp Glu Tyr Ile Leu
 705 710 715 720
 Leu Leu Phe Leu Leu Ala Asp Ala Arg Val Cys Ala Cys Leu Trp
 725 730 735
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 740 745 750
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 755 760 765
 Leu Val Phe Phe Cys Ala Ala Trp Tyr Ile Lys Gly Arg Leu Ala Pro
 770 775 780
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 865 870 875 880
 His Pro Glu Leu Ile Phe Asp Ile Thr Lys Leu Leu Ala Ile Leu
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seq listing.txt

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 1285 1290 1295
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 1345 1350 1355 1360
 Asn Ile Glu Glu Ile Gly Leu Ser Asn Asn Gly Glu Ile Pro Phe Tyr
 1365 1370 1375
 Gly Lys Ala Ile Pro Ile Glu Ala Ile Lys Gly Gly Arg His Leu Ile
 1380 1385 1390
 Phe Cys His Ser Lys Lys Lys Cys Asp Glu Leu Ala Ala Lys Leu Thr
 1395 1400 1405
 Gly Leu Gly Leu Asn Ala Val Ala Tyr Tyr Arg Gly Leu Asp Val Ser
 1410 1415 1420
 Val Ile Pro Pro Ile Gly Asp Val Val Val Val Ala Thr Asp Ala Leu
 1425 1430 1435 1440
 Met Thr Gly Phe Thr Gly Asp Phe Asp Ser Val Ile Asp Cys Asn Thr
 1445 1450 1455
 Cys Val Thr Gln Thr Val Asp Phe Ser Leu Asp Pro Thr Phe Thr Ile
 1460 1465 1470
 Glu Thr Thr Thr Val Pro Gln Asp Ala Val Ser Arg Ser Gln Arg Arg
 1475 1480 1485
 Gly Arg Thr Gly Arg Gly Arg Ser Gly Ile Tyr Arg Phe Val Thr Pro
 1490 1495 1500
 Gly Glu Arg Pro Ser Gly Met Phe Asp Ser Ser Val Leu Cys Glu Cys
 1505 1510 1515 1520
 Tyr Asp Ala Gly Cys Ala Trp Tyr Glu Leu Thr Pro Ala Glu Thr Ser
 1525 1530 1535
 Val Arg Leu Arg Ala Tyr Leu Asn Thr Pro Gly Leu Pro Val Cys Gln
 1540 1545 1550
 Asp His Leu Glu Phe Trp Glu Ser Val Phe Thr Gly Leu Thr His Ile
 1555 1560 1565
 Asp Ala His Phe Leu Ser Gln Thr Lys Gln Ala Gly Asp Asn Phe Pro
 1570 1575 1580
 Tyr Leu Val Ala Tyr Gln Ala Thr Val Cys Ala Arg Ala Gln Ala Pro
 1585 1590 1595 1600
 Pro Pro Ser Trp Asp Gln Met Trp Lys Cys Leu Ile Arg Leu Lys Pro
 1605 1610 1615
 Thr Leu His Gly Pro Thr Pro Leu Leu Tyr Arg Leu Gly Ala Val Gln
 1620 1625 1630
 Asn Glu Val Ile Leu Thr His Pro Ile Thr Lys Tyr Ile Met Ala Cys
 1635 1640 1645
 Met Ser Ala Asp Leu Glu Val Val Thr Ser Thr Trp Val Leu Val Gly
 1650 1655 1660
 Gly Val Leu Ala Ala Leu Ala Ala Tyr Cys Leu Thr Thr Gly Ser Val
 1665 1670 1675 1680

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val Ile val Gly Arg Ile Ile Leu Ser Gly Lys Pro Ala Val val Pro
1685 1690 1695
Asp Arg Glu Val Leu Tyr Gln Glu Phe Asp Glu Met Glu Glu Cys Ala
1700 1705 1710
Ser Gln Leu Pro Tyr Ile Glu Gln Gly Met Gln Leu Ala Glu Gln Phe
1715 1720 1725
Lys Gln Lys Ala Leu Gly Leu Leu Gln Thr Ala Thr Lys Gln Ala Glu
1730 1735 1740
Ala Ala Ala Pro Val Val Glu Ser Lys Trp Arg Ala Leu Glu Thr Phe
1745 1750 1755 1760
Trp Ala Lys His Met Trp Asn Phe Ile Ser Gly Ile Gln Tyr Leu Ala
1765 1770 1775
Gly Leu Ser Thr Leu Pro Gly Asn Pro Ala Ile Ala Ser Leu Met Ala
1780 1785 1790
Phe Thr Ala Ser Ile Thr Ser Pro Leu Thr Thr Gln Asn Thr Leu Leu
1795 1800 1805
Phe Asn Ile Leu Gly Gly Trp Val Ala Ala Gln Leu Ala Pro Pro Ser
1810 1815 1820
Ala Ala Ser Ala Phe Val Gly Ala Gly Ile Ala Gly Ala Ala Val Gly
1825 1830 1835 1840
Ser Ile Gly Leu Gly Lys Val Leu Val Asp Ile Leu Ala Gly Tyr Gly
1845 1850 1855
Ala Gly Val Ala Gly Ala Leu Val Ala Phe Lys Val Met Ser Gly Glu
1860 1865 1870
Val Pro Ser Thr Glu Asp Leu Val Asn Leu Leu Pro Ala Ile Leu Ser
1875 1880 1885
Pro Gly Ala Leu Val Val Gly Val Val Cys Ala Ala Ile Leu Arg Arg
1890 1895 1900
His Val Gly Pro Gly Glu Gly Ala Val Gln Trp Met Asn Arg Leu Ile
1905 1910 1915 1920
Ala Phe Ala Ser Arg Gly Asn His Val Ser Pro Thr His Tyr Val Pro
1925 1930 1935
Glu Ser Asp Ala Ala Ala Arg Val Thr Gln Ile Leu Ser Ser Leu Thr
1940 1945 1950
Ile Thr Gln Leu Leu Lys Arg Leu His Gln Trp Ile Asn Glu Asp Cys
1955 1960 1965
Ser Thr Pro Cys Ser Gly Ser Trp Leu Arg Asp Val Trp Asp Trp Ile
1970 1975 1980
Cys Thr Val Leu Thr Asp Phe Lys Thr Trp Leu Gln Ser Lys Leu Leu
1985 1990 1995 2000
Pro Arg Leu Pro Gly Val Pro Phe Leu Ser Cys Gln Arg Gly Tyr Lys
2005 2010 2015
Gly Val Trp Arg Gly Asp Gly Ile Met Gln Thr Thr Cys Pro Cys Gly
2020 2025 2030
Ala Gln Ile Ala Gly His Val Lys Asn Gly Ser Met Arg Ile Val Gly
2035 2040 2045
Pro Arg Thr Cys Ser Asn Thr Trp His Gly Thr Phe Pro Ile Asn Ala
2050 2055 2060
Tyr Thr Thr Gly Pro Cys Thr Pro Ser Pro Ala Pro Asn Tyr Ser Arg
2065 2070 2075 2080
Ala Leu Trp Arg Val Ala Ala Glu Glu Tyr Val Glu Val Thr Arg Val
2085 2090 2095
Gly Asp Phe His Tyr Val Thr Gly Met Thr Thr Asp Asn Val Lys Cys
2100 2105 2110
Pro Cys Gln Val Pro Ala Pro Glu Phe Phe Thr Glu Val Asp Gly Val
2115 2120 2125
Arg Leu His Arg Tyr Ala Pro Ala Cys Lys Pro Leu Leu Arg Glu Asp
2130 2135 2140
Val Thr Phe Gln Val Gly Leu Asn Gln Tyr Leu Val Gly Ser Gln Leu
2145 2150 2155 2160
Pro Cys Glu Pro Glu Pro Asp Val Thr Val Leu Thr Ser Met Leu Thr
2165 2170 2175
Asp Pro Ser His Ile Thr Ala Glu Thr Ala Lys Arg Arg Leu Ala Arg
2180 2185 2190
Gly Ser Pro Pro Ser Leu Ala Ser Ser Ser Ala Ser Gln Leu Ser Ala
2195 2200 2205
Pro Ser Leu Lys Ala Thr Cys Thr Thr His His Asp Ser Pro Asp Ala
2210 2215 2220

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Asp Leu Ile Glu Ala Asn Leu Leu Trp Arg Gln Glu Met Gly Gly Asn
 2225 2230 2235 2240
 Ile Thr Arg Val Glu Ser Glu Asn Lys Val Val Ile Leu Asp Ser Phe
 2245 2250 2255
 Glu Pro Leu His Ala Glu Gly Asp Glu Arg Glu Ile Ser Val Ala Ala
 2260 2265 2270
 Glu Ile Leu Arg Lys Ser Arg Lys Phe Pro Ser Ala Leu Pro Ile Trp
 2275 2280 2285
 Ala Arg Pro Asp Tyr Asn Pro Pro Leu Leu Glu Ser Trp Lys Asp Pro
 2290 2295 2300
 Asp Tyr Val Pro Pro Val Val His Gly Cys Pro Leu Pro Pro Thr Lys
 2305 2310 2315 2320
 Ala Pro Pro Ile Pro Pro Pro Arg Arg Lys Arg Thr Val Val Leu Thr
 2325 2330 2335
 Glu Ser Asn Val Ser Ser Ala Leu Ala Glu Leu Ala Thr Lys Thr Phe
 2340 2345 2350
 Gly Ser Ser Gly Ser Ser Ala Val Asp Ser Gly Thr Ala Thr Ala Leu
 2355 2360 2365
 Pro Asp Leu Ala Ser Asp Asp Gly Asp Lys Gly Ser Asp Val Glu Ser
 2370 2375 2380
 Tyr Ser Ser Met Pro Pro Leu Glu Gly Glu Pro Gly Asp Pro Asp Leu
 2385 2390 2395 2400
 Ser Asp Gly Ser Trp Ser Thr Val Ser Glu Glu Ala Ser Glu Asp Val
 2405 2410 2415
 Val Cys Cys Ser Met Ser Tyr Thr Trp Thr Gly Ala Leu Ile Thr Pro
 2420 2425 2430
 Cys Ala Ala Glu Glu Ser Lys Leu Pro Ile Asn Pro Leu Ser Asn Ser
 2435 2440 2445
 Leu Leu Arg His His Asn Met Val Tyr Ala Thr Thr Ser Arg Ser Ala
 2450 2455 2460
 Ser Leu Arg Gln Lys Lys Val Thr Phe Asp Arg Leu Gln Val Leu Asp
 2465 2470 2475 2480
 Asp His Tyr Arg Asp Val Leu Lys Glu Met Lys Ala Lys Ala Ser Thr
 2485 2490 2495
 Val Lys Ala Lys Leu Leu Ser Ile Glu Glu Ala Cys Lys Leu Thr Pro
 2500 2505 2510
 Pro His Ser Ala Lys Ser Lys Phe Gly Tyr Gly Ala Lys Asp Val Arg
 2515 2520 2525
 Asn Leu Ser Ser Arg Ala Val Asn His Ile Arg Ser Val Trp Glu Asp
 2530 2535 2540
 Leu Leu Glu Asp Thr Glu Thr Pro Ile Asp Thr Thr Ile Met Ala Lys
 2545 2550 2555 2560
 Ser Glu Val Phe Cys Val Gln Pro Glu Lys Gly Gly Arg Lys Pro Ala
 2565 2570 2575
 Arg Leu Ile Val Phe Pro Asp Leu Gly Val Arg Val Cys Glu Lys Met
 2580 2585 2590
 Ala Leu Tyr Asp Val Val Ser Thr Leu Pro Gln Ala Val Met Gly Ser
 2595 2600 2605
 Ser Tyr Gly Phe Gln Tyr Ser Pro Lys Gln Arg Val Glu Phe Leu Val
 2610 2615 2620
 Asn Thr Trp Lys Ser Lys Lys Cys Pro Met Gly Phe Ser Tyr Asp Thr
 2625 2630 2635 2640
 Arg Cys Phe Asp Ser Thr Val Thr Glu Ser Asp Ile Arg Val Glu Glu
 2645 2650 2655
 Ser Ile Tyr Gln Cys Cys Asp Leu Ala Pro Glu Ala Arg Gln Ala Ile
 2660 2665 2670
 Arg Ser Leu Thr Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser
 2675 2680 2685
 Lys Gly Gln Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu
 2690 2695 2700
 Thr Thr Ser Cys Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala
 2705 2710 2715 2720
 Ala Cys Arg Ala Ala Lys Leu Gln Asp Cys Thr Met Leu Val Asn Gly
 2725 2730 2735
 Asp Asp Leu Val Val Ile Cys Glu Ser Ala Gly Thr Gln Glu Asp Ala
 2740 2745 2750
 Ala Ala Leu Arg Ala Phe Thr Glu Ala Met Thr Arg Tyr Ser Ala Pro
 2755 2760 2765

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Pro Gly Asp Pro Pro Gln Pro Glu Tyr Asp Leu Glu Leu Ile Thr Ser
2770                2775                2780
Cys Ser Ser Asn Val Ser Val Ala His Asp Ala Ser Gly Lys Arg Val
2785                2790                2795                2800
Tyr Tyr Leu Thr Arg Asp Pro Thr Thr Pro Leu Ala Arg Ala Ala Trp
                2805                2810                2815
Glu Thr Ala Arg His Thr Pro Ile Asn Ser Trp Leu Gly Asn Ile Ile
2820                2825                2830
Met Tyr Ala Pro Thr Leu Trp Ala Arg Met Ile Leu Met Thr His Phe
2835                2840                2845
Phe Ser Ile Leu Leu Ala Gln Glu Gln Leu Glu Lys Ala Leu Asp Cys
2850                2855                2860
Gln Ile Tyr Gly Ala Cys Tyr Ser Ile Glu Pro Leu Asp Leu Pro Gln
2865                2870                2875                2880
Ile Ile Glu Arg Leu His Gly Leu Ser Ala Phe Thr Leu His Ser Tyr
2885                2890                2895
Ser Pro Gly Glu Ile Asn Arg Val Ala Ser Cys Leu Arg Lys Leu Gly
2900                2905                2910
Val Pro Pro Leu Arg Thr Trp Arg His Arg Ala Arg Ser Val Arg Ala
2915                2920                2925
Lys Leu Leu Ser Gln Gly Gly Arg Ala Ala Thr Cys Gly Arg Tyr Leu
2930                2935                2940
Phe Asn Trp Ala Val Arg Thr Lys Leu Lys Leu Thr Pro Ile Pro Ala
2945                2950                2955                2960
Ala Ser Gln Leu Asp Leu Ser Gly Trp Phe Val Ala Gly Tyr Ser Gly
2965                2970                2975
Gly Asp Ile Tyr His Ser Leu Ser Arg Ala Arg Pro Arg Trp Phe Pro
2980                2985                2990
Leu Cys Leu Leu Leu Leu Ser Val Gly Val Gly Ile Tyr Leu Leu Pro
2995                3000                3005
Asn Arg
3010

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